



**DECLARATION
FOR PATENT APPLICATION**

As below named inventors,

Michael Bittner

Edith Y. Wong

Marcel P. Bruchez, Jr.

We hereby declare that our residence, post office address and citizenship are as stated below next to our name.

We believe we are original and joint inventors of the subject matter which is claimed and for which a patent is sought on the invention entitled: OLIGONUCLEOTIDE-TAGGED SEMICONDUCTOR NANOCRYSTALS FOR MICROARRAY AND FLUORESCENCE IN SITU HYBRIDIZATION, the specification of which

☐ is attached hereto.

☒ was filed on January 18, 2001 and assigned Application Serial Number 09/766,273.

We hereby state that we have reviewed and understand the contents of the above-identified specification, including the claims as amended by any amendment referred to above.

We acknowledge the duty to disclose information which is material to the examination of this application in accordance with Title 37, Code of Federal Regulations, Section 1.56(a).

We hereby claim foreign priority benefits under Title 35, United States Code, § 119 of any foreign applications for patent or inventor's certificate, listed below and so identified, and we have also identified below any foreign application for patent or inventor's certificate on this invention filed by us or our legal representatives or assigns and having a filing date before that of the application on which priority is claimed.

| Number | Country | Day/Month/Year Filed | Priority Claimed - Yes or No |
|--------|---------|-------------------------|---------------------------------|
| | | | |
| | | | |

We hereby claim the benefit under Title 35, United States Code, § 120 of any United States applications listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code, § 112, we acknowledge the duty to disclose material information as defined in Title 37, Code of Federal Regulations, § 1.56(a) which occurred between the filing date of the prior application and the national or PCT international filing date of this application.

| Application Serial No. | Filing Date | Status |
|------------------------|-------------|--------|
| | | |
| | | |

We hereby claim the benefit under Title 35, United States Code, § 119(e) of any United States provisional application(s) below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States provisional application in the manner provided by the first paragraph of Title 35, United States Code, § 112, we acknowledge the duty to disclose material information as defined in Title 37, Code of Federal Regulations, § 1.56(a) which occurred between the filing date of the prior provisional application and the filing date of this application.

| Provisional Application No. | Filing Date | Status |
|-----------------------------|-------------|--------|
| 60/176,793 | 1/18/00 | Closed |
| | | |

We hereby declare that all statements made herein of our own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Full name of sole or first joint inventor: **MICHAEL BITTNER**

Inventor's signature: _____ Date: _____
Residence 15 Lodge Place, Rockville, MD 20850
Post Office Address:
Citizenship: U.S

Full name of sole or second joint inventor: **EDITH Y. WONG**

Inventor's signature: _____ Date: _____
Residence 22 Volterra Court, Danville, CA 94526
Post Office Address:
Citizenship: U.S.

Full name of sole or third joint inventor: **MARCEL P. BRUCHEZ, JR.**

Inventor's signature: _____ Date: _____
Residence 312 River Creek, Fremont, CA 94536
Post Office Address:
Citizenship: U.S.



DECLARATION FOR PATENT APPLICATION

As below named inventors,

Michael Bittner

Edith Y. Wong

Marcel P. Bruchez, Jr.

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| Provisional Application No. | Filing Date | Status |
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| 60/176,793 | 1/18/00 | Closed |
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We hereby declare that all statements made herein of our own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

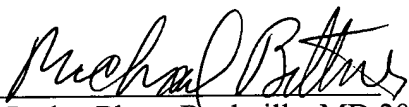
Full name of sole or first joint inventor: **MICHAEL BITTNER**

Inventor's signature:

Residence

Post Office Address:

Citizenship:

 Date: 5/15/01
15 Lodge Place, Rockville, MD 20850

U.S

Full name of sole or second joint inventor: **EDITH Y. WONG**

Inventor's signature: Edith Wong Date: 4/30/01
Residence 22 Volterra Court, Danville, CA 94526
Post Office Address:
Citizenship: U.S.

Full name of sole or third joint inventor: **MARCEL P. BRUCHEZ, JR.**

Inventor's signature: Marcel Bruchez Jr Date: 4/30/01
Residence 312 River Creek, Fremont, CA 94536
Post Office Address:
Citizenship: U.S.



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Michael BITTNER, et al.

Assignees: Quantum Dot Corporation and THE
GOVERNMENT OF THE UNITED STATES OF
AMERICA, as represented by the Secretary,
Department of Health and Human Services

Filing Date: January 18, 2001

Examiner: Not Yet Assigned

Serial No.: 09/766,273

Group Art Unit: 1645

Title: **OLIGONUCLEOTIDE-TAGGED SEMICONDUCTOR NANOCRYSTALS FOR
MICROARRAY AND FLUORESCENCE IN SITU HYBRIDIZATION**Assistant Commissioner of Patents
Washington, D.C 20231**POWER OF ATTORNEY BY ASSIGNEE AND EXCLUSION OF
INVENTOR UNDER 37 C.F.R. 3.71**

Sir:

The undersigned is an assignee of two of the inventors' entire right, title and interest in the above-identified subject application by virtue of an assignment, a copy of which is attached hereto. The assignee hereby appoints:

| Attorney | Registration No. | Attorney | Registration No. |
|---------------------------|------------------|-------------------------|------------------|
| David Beck | 37,776 | John W. Calkins | 43,523 |
| Patricia R. Coleman James | 37,155 | Darren E. Donnelly | 44,093 |
| Terry Garnett | 44,698 | Carol M. Gruppi | 37,341 |
| Susan Hubl | 47,668 | David W. Maher | 40,077 |
| Christian Platt | 46,998 | Roger Sampson | 44,314 |
| Michael J. Shuster | 41,310 | William E. Thomson, Jr. | 20,719 |
| Michael E. Woods | 33,466 | Rajiv Yadav | 43,999 |
| Vincent K. Yip | 42,245 | Kenneth Barovsky | 36,442 |

as its attorneys and agents with full rights of substitution and revocation to prosecute this application for Letters Patent and to transact all business in the Patent Office connected therewith, said appointment to be to the exclusion of the inventors and their attorneys in accordance with the provisions of Rule 3.71 of the Patent Office Rules of Practice. The undersigned has reviewed the evidentiary documents and certifies that, to the best of this assignee's knowledge and belief, title is in the assignee identified below.

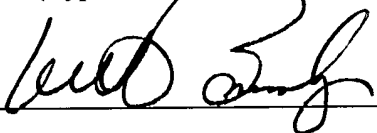
Please direct all correspondence to :

David W. Maher
McCutchen, Doyle, Brown & Enersen, LLP
Three Embarcadero Center
San Francisco, California 94111
Telephone: (650) 849-4908
Telefax: (650) 849-4800

Dated: 11 MAY 2001

Assignee: QUANTUM DOT CORPORATION

By: KENNETH BAROVSKY
(Type or Print Name)

Signature: 

Title: VICE PRESIDENT

Address: Quantum Dot Corp.
26136 Research Rd
Hayward, CA 94545

ASSIGNMENT

For good and valuable consideration, the receipt of which is hereby acknowledged, we, the undersigned, inventors:

Edith Y. Wong, 22 Volterra Court, Danville, CA 94526

Marcel P. Bruchez, Jr., 312 River Creek, Fremont, CA 94536

Who have jointly created a certain invention with **Michael Bittner** for which an application for United States Letters Patent entitled **OLIGONUCLEOTIDE-TAGGED SEMICONDUCTOR NANOCRYSTALS FOR MICROARRAY AND FLUORESCENCE IN SITU HYBRIDIZATION** has been executed and

☐ is filed herewith;

☒ was filed in the U.S. Patent and Trademark Office on January 18, 2001 and assigned Serial Number 09/766,273;

Do hereby sell, assign and transfer to Quantum Dot Corporation, a corporation, having a place of business at 26136 Research Road, Hayward, California 94545, its successors, assigns, and legal representatives, our entire right, title and interest in and to said invention and said application and to any and all inventions described in said application for the United States, its territorial possessions and all foreign countries, and our entire right, title and interest in and to any and all Letters Patent which may be granted therefore in the United States, its territorial possessions and all foreign countries; and in and to any and all continuations-in-part, continuations, divisions, substitutes, reissues, extensions thereof, and all other applications for Letters Patent relating thereto which have been or shall be filed in the United States, its territorial possession and/or any foreign countries, and all our rights, together with all priority rights, under any of the international conventions, unions, agreements, acts, and treaties, including all future conventions, unions, agreements, acts, and treaties;

Agree that Quantum Dot Corporation, hereinafter referred to as Assignee, may apply for and receive Letters Patent for said invention and said inventions, hereinafter referred to as said invention, in its own name, in the United States, its territorial possessions, and all foreign countries; and that, when requested to carry out in good faith the intent and purpose of this assignment, at the expense of said Assignee, its successors, assigns and legal representatives, the undersigned will execute all continuations-in-part, continuations, divisions, substitutes, reissues, extensions thereof, execute all rightful oaths, assignments, powers of attorney and other papers, testify in any legal or quasi legal proceedings; communicate to said Assignee, its successors, assigns or legal representatives all facts known to the undersigned relating to said invention and the history thereof; and generally do everything possible which said Assignee, its successors, assigns, or legal representatives shall consider desirable for aiding in securing, maintaining and enforcing proper patent protection for said invention and for vesting title to said invention and all applications for patents on said invention in said Assignee, successors, assigns, or legal representatives;

The terms "Application" and Application for Letters Patent" as used herein include both provisional and non-provisional applications;

Inventors hereby authorize the above-mentioned Assignee or its legal representative to insert in this instrument the filing date and serial number of said Application or any other information that may be necessary or desirable in order to comply with the rules of the United States Patent and Trademark Office for recordation of this document; and

Covenant with said Assignee, its successors, assigns, or legal representatives that no assignment, grant, mortgage, license or other agreement affecting the rights and property herein conveyed has been made to others by the undersigned, and that full right to convey the same has herein expressed is possessed by the undersigned.

IN THE TESTIMONY WHEREOF we have hereunto set our signatures on the date indicated below.

EDITH Y. WONG

Edith Y. Wong

Date: 4/30/01

STATE OF CALIFORNIA

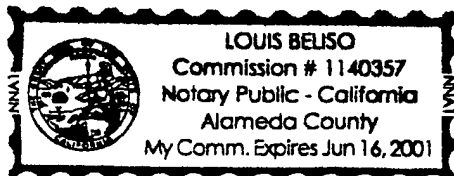
COUNTY OF Alameda

On April 30, 2001 before me Louis Beliso, Notary Public,

personally appeared Edith Y. Wong

NAME(S) OF SIGNER(S)

☐ personally known to me - OR - ☒ proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.



Witness my hand and official seal.

Louis Beliso
SIGNATURE OF NOTARY

—OPTIONAL SECTION—
CAPACITY CLAIMED BY
SIGNER

Though statute does not require the Notary to fill in the data below, doing so may prove invaluable to persons relying on the document.

☒ INDIVIDUAL
☐ CORPORATE OFFICER(S)

TITLE(S)

☐ PARTNER(S) ☐ LIMITED
☐ GENERAL
☐ ATTORNEY-IN-FACT
☐ TRUSTEE(S)
☐ GUARDIAN/CONSERVATOR
☐ OTHER: _____

SIGNER IS REPRESENTING:
Name of Person(s) or Entity(ies)

MARCEL P. BRUCHEZ, JR.

Marcel Bruchez Jr

Date: 4/30/01

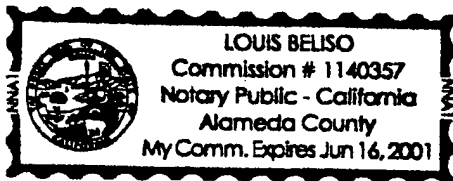
STATE OF CALIFORNIA

COUNTY OF Alameda

On April 30, 2001 before me, Louis Beliso, Notary Public,

personally appeared MARCEL BRUCHEZ, JR.
NAME(S) OF SIGNER(S)

☐ personally known to me - OR - ☒ proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.



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☐ PARTNER(S) ☐ LIMITED

☐ GENERAL

☐ ATTORNEY-IN-FACT

☐ TRUSTEE(S)

☐ GUARDIAN/CONSERVATOR

☐ OTHER: _____

SIGNER IS REPRESENTING:

Name of Person(s) or Entity(ies)



Docket No. 22564-0707US

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Michael BITTNER, et al.

Assignees: Quantum Dot Corporation and THE
GOVERNMENT OF THE UNITED STATES OF
AMERICA, as represented by the Secretary,
Department of Health and Human Services

Filing Date: January 18, 2001

Examiner: Not Yet Assigned

Serial No.: 09/766,273

Group Art Unit: 1645

Title: **OLIGONUCLEOTIDE-TAGGED SEMICONDUCTOR NANOCRYSTALS FOR
MICROARRAY AND FLUORESCENCE IN SITU HYBRIDIZATION**

Assistant Commissioner of Patents
Washington, D.C 20231

**POWER OF ATTORNEY BY ASSIGNEE AND EXCLUSION OF
INVENTOR UNDER 37 C.F.R. 3.71**

Sir:

The undersigned is the assignee of one of the inventors' entire right, title and interest in the above-identified subject application by virtue of an assignment, a copy of which is attached hereto. The assignee hereby appoints:

| Attorney | Registration No. | Attorney | Registration No. |
|---------------------------|------------------|-------------------------|------------------|
| David Beck | 37,776 | John W. Calkins | 43,523 |
| Patricia R. Coleman James | 37,155 | Darren E. Donnelly | 44,093 |
| Terry Garnett | 44,698 | Carol M. Gruppi | 37,341 |
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| Michael E. Woods | 33,466 | Rajiv Yadav | 43,999 |
| Vincent K. Yip | 42,245 | James C. Haight | 25,588 |
| Robert Benson | 33,612 | Jack Spiegel | 34,477 |
| Susan S. Rucker | 35,762 | David R. Sadowski | 32,808 |
| Steven M. Ferguson | 38,448 | Stephen L. Finley | 36,357 |
| John Peter Kim | 38,514 | Norbert Pontzer | 40,777 |
| Richard Rodriguez | 45,980 | Marlene Shinn | 46,005 |

as its attorneys and agents with full rights of substitution and revocation to prosecute this application for Letters Patent and to transact all business in the Patent Office connected therewith, said appointment to be to the exclusion of the inventors and their attorney(s) in accordance with the provisions of Rule 3.71 of the Patent Office Rules of Practice. The undersigned has reviewed the evidentiary documents and certifies that, to the best of this assignee's knowledge and belief, title is in the assignee identified below.

Please direct all correspondence to:

David W. Maher
McCutchen, Doyle, Brown & Enersen, LLP
Three Embarcadero Center
San Francisco, California 94111
Telephone: (650) 849-4908
Telefax: (650) 849-4800

Dated: 5/22/2001

Assignee: **THE GOVERNMENT OF THE
UNITED STATES OF
AMERICA, as represented by the
Secretary, Department of Health
and Human Services**

By: JACK SPIEGEL
(Typed or Printed Name)

Signature: Jack Spiegel

Title: _____

Address: _____

Jack Spiegel, Ph.D.
Director, Division of Technology
Development and Transfer
Office of Technology Transfer
National Institutes of Health

ASSIGNMENT

For good and valuable consideration, the receipt of which is hereby acknowledged, I, the undersigned, co-inventor:

MICHAEL BITTNER, 15 Lodge Place, Rockville, MD 20850

Who has jointly created a certain invention with **Edith Y. Wong and Marcel P. Bruchez, Jr.** for which an application for United States Letters Patent entitled **OLIGONUCLEOTIDE-TAGGED SEMICONDUCTOR NANOCRYSTALS FOR MICROARRAY AND FLUORESCENCE IN SITU HYBRIDIZATION** has been executed and

- ☐ is filed herewith;
- ☒ was filed in the U.S. Patent and Trademark Office on January 18, 2001 and assigned Serial Number 09/766,273;

Do hereby sell, assign and transfer to THE GOVERNMENT OF THE UNITED STATES OF AMERICA, as represented by the Secretary, Department of Health and Human Services, its successors, assigns, and legal representatives, my entire right, title and interest in and to said invention and said application and to any and all inventions described in said application for the United States, its territorial possessions and all foreign countries, and my entire right, title and interest in and to any and all Letters Patent which may be granted therefore in the United States, its territorial possessions and all foreign countries; and in and to any and all continuations-in-part, continuations, divisions, substitutes, reissues, extensions thereof, and all other applications for Letters Patent relating thereto which have been or shall be filed in the United States, its territorial possession and/or any foreign countries, and all my rights, together with all priority rights, under any of the international conventions, unions, agreements, acts, and treaties, including all future conventions, unions, agreements, acts, and treaties;

Agree that THE GOVERNMENT OF THE UNITED STATES OF AMERICA, as represented by the Secretary, Department of Health and Human Services, hereinafter referred to as Assignee, may apply for and receive Letters Patent for said invention and said inventions, hereinafter referred to as said invention, in its own name, in the United States, its territorial possessions, and all foreign countries; and that, when requested to carry out in good faith the intent and purpose of this assignment, at the expense of said Assignee, its successors, assigns and legal representatives, the undersigned will execute all continuations-in-part, continuations, divisions, substitutes, reissues, extensions thereof, execute all rightful oaths, assignments, powers of attorney and other papers, testify in any legal or quasi legal proceedings; communicate to said Assignee, its successors, assigns or legal representatives all facts known to the undersigned relating to said invention and the history thereof; and generally do everything possible which said Assignee, its successors, assigns, or legal representatives shall consider desirable for aiding in securing, maintaining and enforcing proper patent protection for said invention and for vesting title to said invention and all applications for patents on said invention in said Assignee, successors, assigns, or legal representatives;

The terms "Application" and Application for Letters Patent" as used herein include both provisional and non-provisional applications;

Inventor hereby authorizes the above-mentioned Assignee or its legal representative to insert in this instrument the filing date and serial number of said Application or any other information that may be necessary or desirable in order to comply with the rules of the United States Patent and Trademark Office for recordation of this document; and

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IN THE TESTIMONY WHEREOF I have hereunto set my signature on the date indicated below.

MICHAEL BITTNER

Michael Bittner

Date: 5/15/01

STATE OF Maryland

COUNTY OF Montgomery

On May 15, 2001 before me, Trudy C. Welsh, Notary Public,

personally appeared Michael Bittner
NAME(S) OF SIGNER(S)

☒ personally known to me - OR - ☐ proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

Witness my hand and official seal.

Trudy C. Welsh
SIGNATURE OF NOTARY
My Commission Expires
May 1, 2003

—OPTIONAL SECTION—
CAPACITY CLAIMED BY
SIGNER

Though statute does not require the Notary to fill in the data below, doing so may prove invaluable to persons relying on the document.

- ☐ INDIVIDUAL
☐ CORPORATE OFFICER(S)

TITLE(S)

- ☐ PARTNER(S) ☐ LIMITED
☐ GENERAL
☐ ATTORNEY-IN-FACT
☐ TRUSTEE(S)
☐ GUARDIAN/CONSERVATOR
☐ OTHER: _____

SIGNER IS REPRESENTING:

Name of Person(s) or Entity(ies)

